# UNITED STATES DEPARTMENT OF AGRICULTURE
# NATURAL RESOURCES CONSERVATION SERVICE

# ECOLOGICAL SITE DESCRIPTION

## ECOLOGICAL SITE CHARACTERISTICS

**Site Type**: Rangeland

**Site ID**: R070XD152NM

**Site Name**: Shallow

**Precipitation or Climate Zone**: 13 to 18 inches

**Phase**:

## PHYSIOGRAPHIC FEATURES

**Narrative**:

This site consists of shallow soils occupying upland plains, gently sloping side slopes and tops of mountain foothills. Slopes vary from 1 to 9 percent, but average 5 percent. Direction of the slope varies and is not significant. Elevations range from 4, 000 to 7,000 feet above sea level.

**Land Form:**

1. Plain
2. Hillsides
3.

**Aspect:**

1. N/A
2.
3.

| | Minimum | Maximum |
|---|---|---|
| **Elevation (feet)** | 4,000 | 7,000 |
| **Slope (percent)** | 1 | 9 |
| **Water Table Depth (inches)** | N/A | N/A |

| **Flooding:** | **Minimum** | **Maximum** |
|---|---|---|
| **Frequency** | N/A | N/A |
| **Duration** | N/A | N/A |

| **Ponding:** | **Minimum** | **Maximum** |
|---|---|---|
| **Depth (inches)** | N/A | N/A |
| **Frequency** | N/A | N/A |
| **Duration** | N/A | N/A |

**Runoff Class**:

Negligible to medium.

## CLIMATIC FEATURES

**Narrative**:

The climate of this area is 'semi-arid continental."

The average annual precipitation ranges from 13 to 18 inches. Variations of 5 inches, more or less, are not uncommon. Approximately 70 percent of this occur from May through October. Most of the summer precipitation comes in the form of high-intensity, short-duration thunderstorms. Winter moisture is usually negligible.

Distinct seasonal changes and large annual and diurnal temperature changes characterize temperatures. The average annual temperature ranges from 55 degrees F to 60 degrees F with extremes of 20 degrees F below zero in the winter to 110 degrees F in the summer.

The average frost-free season is 190 to 200 days. The last killing frost is in early April with the first killing frost being in mid October.

Both temperature and precipitation favor warm-season, perennial plant communities. Sufficient late winter and early spring moisture allows cool-season species to occupy a minor component within the plant community in favorable years. Due to the shallow soil profile vegetation responds well to light rains. Strong winds blow from February through June from the west and southwest. This tends to dry out the soil during a critical period for cool-season plant growth.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

| | Minimum | Maximum |
|---|---|---|
| **Frost-free period (days)**: | 160 | 191 |
| **Freeze-free period (days)**: | 180 | 221 |
| **Mean annual precipitation (inches)**: | 13 | 18 |

**Monthly moisture (inches) and temperature ($^0$F) distribution:**

| | Precip. Min. | Precip. Max. | Temp. Min. | Temp. Max. |
|---|---|---|---|---|
| January | .47 | .56 | 21.4 | 56.6 |
| February | .50 | .54 | 23.8 | 62.1 |
| March | .49 | .57 | 28.5 | 68.5 |
| April | .54 | .60 | 35.0 | 76.7 |
| May | 1.13 | 1.44 | 43.2 | 83.5 |
| June | 1.78 | 1.84 | 51.6 | 92.2 |
| July | 1.87 | 2.98 | 55.7 | 92.1 |
| August | 2.29 | 3.26 | 54.2 | 90.3 |
| September | 2.67 | 2.80 | 48.2 | 84.3 |
| October | 1.24 | 1.40 | 37.6 | 76.7 |
| November | .53 | .55 | 27.5 | 65.5 |
| December | .60 | .68 | 21.6 | 57.8 |

**Climate Stations**:

| | | | | Period | | |
|---|---|---|---|---|---|---|
| Station ID | 292865 | Location | Elk 2E | From: 6/1/1895 | To: | 12/31/00 |
| Station ID | 294112 | Location | Hope | From: 03/01/19 | To: | 12/31/00 |

## INFLUENCING WATER FEATURES

**Narrative**:

This site is not influenced by water from a wetland or stream.

**Wetland description:**

| System | Subsystem | Class |
|---|---|---|
| N/A | | |

**If Riverine Wetland System enter Rosgen Stream Type**:

N/A

## REPRESENTATIVE SOIL FEATURES

**Narrative**:

The soils on this site are shallow to very shallow, well drained over indurated caliche. Depth averages 9 to 18 inches. The soils have a moderate to moderately rapid permeability and a low water-holding capacity. Surface textures vary from loam to cobbly loam.

**Parent Material Kind**: Alluvium
**Parent Material Origin**: Mixed

**Surface Texture:**

| |
|---|
| 1. Loam |
| 2. Cobbly loam |
| 3. Gravelly loam |

**Surface Texture Modifier:**

| |
|---|
| 1. Gravel |
| 2. Cobble |
| 3. |

**Subsurface Texture Group:** Loamy
**Surface Fragments <=3" (% Cover):** 15 to 35
**Surface Fragments >3" (% Cover)**: 15 to 35

**Subsurface Fragments <=3" (%Volume)**: 15 to 35
**Subsurface Fragments >=3" (%Volume)**: 15 to 25

| | Minimum | Maximum |
|---|---|---|
| **Drainage Class**: | Well | Well |
| **Permeability Class**: | Moderate | Moderately rapid |
| **Depth (inches)**: | <9 | >18 |
| **Electrical Conductivity (mmhos/cm)**: | Unknown | Unknown |
| **Sodium Absorption Ratio**: | Unknown | Unknown |
| **Soil Reaction (1:1 Water)**: | Unknown | Unknown |
| **Soil Reaction (0.1M CaCl2)**: | Unknown | Unknown |
| **Available Water Capacity (inches)**: | 3 | 6 |
| **Calcium Carbonate Equivalent (percent)**: | Unknown | Unknown |

## PLANT COMMUNITIES

**Ecological Dynamics of the Site**:

**Plant Communities and Transitional Pathways (diagram)**

**Plant Community Name**: Historic Climax Plant Community

**Plant Community Sequence Number**: 1 **Narrative Label**: HCPC

**Plant Community Narrative**: Historic Climax Plant Community
This site is a grassland dominated by short and mid warm-season grasses. This site also provides a significant amount of shrubs and half-shrubs. Forb production varies greatly from season to season and year to year, and can be significant in year of high rainfall. Production and composition vary widely with elevation.

| | |
|---|---|
| Canopy Cover: | |
| Trees and shrubs | 2 to 5 % |
| Ground Cover (Average Percent of Surface Area). | |
| Grasses & Forbs | 40 |
| Bare ground | 37 |
| Surface cobble and stone | 15 |
| Litter (percent) | 8 |
| Litter (average depth in cm.) | 2 |

**Plant Community Annual Production (by plant type)**:

**Annual Production (lbs/ac)**

| Plant Type | Low | RV | High |
|---|---|---|---|
| **Grass/Grasslike** | 306 | 527 | 748 |
| **Forb** | 36 | 62 | 88 |
| **Tree/Shrub/Vine** | 81 | 140 | 198 |
| **Lichen** | | | |
| **Moss** | | | |
| **Microbiotic Crusts** | | | |
| **Total** | 450 | 775 | 1,100 |

**Plant Community Composition and Group Annual Production**:

**Plant Type - Grass/Grasslike**

| Group Number | Scientific Plant Symbol | Common Name | Species Annual Production | Group Annual Production |
|---|---|---|---|---|
| 1 | BOER4 | Black Grama | 155 – 310 | 155 – 310 |
| 2 | BOCU | Sideoats Grama | 78 – 116 | 78 – 116 |
| 3 | SCBR2<br>MURI | Burrograss (lower elevations only)<br>Mat Muhly (higher elevations only) | 23 – 39 | 23 – 39 |
| 4 | TRIDE | Tridens spp. | 39 – 78 | 39 – 78 |
| 5 | BOHI2<br>BOGR2 | Hairy Grama<br>Blue Grama | 39 – 78 | 39 – 78 |
| 6 | ARIST | Threeawn spp. | 39 – 62 | 39 – 62 |
| 7 | SPORO | Dropseed spp. | 8 – 39 | 8 – 39 |
| 8 | SCSC<br>BOBA3 | Little Bluestem (higher elevations only)<br>Cane Bluestem (higher elevations only) | 39 – 62 | 39 – 62 |
| 9 | MUSE | Curlyleaf Muhly | 16 – 39 | 16 – 39 |
| 10 | SEVU2 | Plains Bristlegrass | 16 – 39 | 16 – 39 |
| 11 | PAHA | Hall's Panicum | 16 – 39 | 16 – 39 |
| 12 | ERIN | Plains Lovegrass | 16 – 62 | 16 – 62 |
| 13 | 2GRAM | Other Grasses | 16 – 39 | 16 - 39 |

**Plant Type - Forb**

| Group Number | Scientific Plant Symbol | Common Name | Species Annual Production | Group Annual Production |
|---|---|---|---|---|
| 14 | ERIOG | Wildbuckwheat spp. | 8 – 16 | 8 – 16 |
| 15 | THAC | Prickleaf Dogweed | 8 – 23 | 8 – 23 |
| 16 | SENNA | Senna spp. | 8 – 23 | 8 – 23 |
| 17 | CROTO | Croton spp. | 8 – 23 | 8 – 23 |
| 18 | 2FORB | Other Forbs | 39 – 54 | 39 - 54 |

**Plant Type – Tree/Shrub/Vine**

| Group Number | Scientific Plant Symbol | Common Name | Species Annual Production | Group Annual Production |
|---|---|---|---|---|
| 19 | ACGR | Catclaw Acacia | 16 – 39 | 16 – 39 |
| 20 | YUCCA | Yucca spp. | 8 – 23 | 8 – 23 |
| 21 | GUSA2 | Broom Snakeweed | 8 – 23 | 8 – 23 |
| 22 | 2SD | Other Shrubs | 38 – 78 | 39 - 78 |

**Plant Type - Lichen**

| Group Number | Scientific Plant Symbol | Common Name | Species Annual Production | Group Annual Production |
|---|---|---|---|---|
| | | | | |
| | | | | |

**Plant Type - Moss**

| Group Number | Scientific Plant Symbol | Common Name | Species Annual Production | Group Annual Production |
|---|---|---|---|---|
| | | | | |
| | | | | |

**Plant Type - Microbiotic Crusts**

| Group Number | Scientific Plant Symbol | Common Name | Species Annual Production | Group Annual Production |
|---|---|---|---|---|
| | | | | |
| | | | | |

Other grasses which may appear on this site include: fluffgrass, tobosa, green sprangletop, bottlebrush squirreltail, Indiangrass, little awn needlegrass, creeping muhly, silver bluestem and wolftail.
Other shrubs include: catclaw mimosa, Apacheplume, Bigelow sagebrush, yerba-de-pasmo, algerita, hairy mountainmahogany, dalea spp., creosotebush, oak spp., skunkbush sumac, cholla, sotol, ephedra spp., winterfat, pale wolfberry, threadleaf groundsel, javelina bush, sacahuista and juniper.
Other forbs include: cutleaf haplopappus, wooly Indianwheat, bladderpod, yarrow, desert holly, desert baileya, fleabane, verbena, deer tongue, and blanket flower.

**Plant Growth Curves**

**Growth Curve ID** **4602NM**

**Growth Curve Name**: **HCPC**

**Growth Curve Description**: **Mixed short/mid warm-season grassland with significant shrub component. Forbs vary from year to year.**

| Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 3 | 5 | 10 | 10 | 25 | 30 | 12 | 5 | 0 | 0 |

# ECOLOGICAL SITE INTERPRETATIONS

**Animal Community**:

Habitat for Wildlife:

This site provides habitat which supports a resident animal community that is characterized by pronghorn antelope, bobcat, coyotes, black-tailed jackrabbit, spotted ground squirrel, plains pocket mouse, southern plains woodrat, horned lark, and scaled quail. Mule deer feed in this site during certain seasons of the year.

**Hydrology Functions:**

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

**Hydrologic Interpretations**

| Soil Series | Hydrologic Group |
|---|---|
| Penasco | D |
| Espy | ? |
| Ector | C |
| Tencee | ? |

**Recreational Uses**:

This site offers limited potential for hiking, picnicking, horseback riding, and backpacking. The main limitations are lack of water and shade. Hunting is good for antelope, dove, quail, and varmints. Trapping for fur-bearing animals is also good. The terrain typical of the wide-open spaces enhances the natural beauty, and by the large variety of flowering forbs that are produced during years of adequate moisture.

**Wood Products**:

This site has no value for wood products.

**Other Products**:

Grazing:

This site is suited for grazing by all kinds and classes of livestock during all seasons of the year. Flexibility in livestock numbers is important. This site responds well to a planned system of grazing that rotates the season of use. Under continuous mismanagement, species like black grama, sideoats grama, and the bluestems decrease in composition while threeawn spp., dropseed spp., burrograss, and tridens spp., increase in composition. In a deteriorated condition, the percentage of bare ground increases, thereby increasing the erosion hazard. Both wind and water erosion can become serious if this site is continually mismanaged. Predator control should be considered during calving season and when grazing sheep or goats.

**Other Information:**

**Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month**

| **Similarity Index** | **Ac/AUM** |
|---|---|
| 100 - 76 | 3.0 – 4.5 |
| 75 – 51 | 4.0 – 6.5 |
| 50 – 26 | 6.0 – 11.0 |
| 25 – 0 | 11.0+ |

| Plant Part | Code | Species Preference | Code |
|---|---|---|---|
| **Stems** | **S** | **None Selected** | **NS** |
| **Leaves** | **L** | **Preferred** | **P** |
| **Flowers** | **F** | **Desirable** | **D** |
| **Fruits/Seeds** | **F/S** | **Undesirable** | **U** |
| **Entire Plant** | **EP** | **Not Consumed** | **NC** |
| **Underground Parts** | **UP** | **Emergency** | **E** |
| | | **Toxic** | **T** |

**Plant Preference by Animal Kind**:

**Animal Kind**: Livestock
**Animal Type**: Cattle

| Common Name | Scientific Name | Plant Part | Forage Preferences | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | J | F | M | A | M | J | J | A | S | O | N | D |
| Blue Grama | Bouteloua gracilis | EP | D | D | D | D | P | P | P | P | P | D | D | D |
| Black Grama | Bouteloua eriopoda | EP | P | P | P | D | D | D | D | D | D | D | P | P |
| Sideoats Grama | Bouteloua curtipendula | EP | P | P | P | P | P | P | P | P | P | P | P | P |
| Little Bluestem | Schizachyrium scoparium | EP | D | D | D | P | P | P | P | D | D | D | D | D |
| Cane Bluestem | Bothriochloa barbinodis | EP | U | U | U | U | U | U | P | P | D | U | U | U |
| Plains Bristlegrass | Setaria vulpiseta | EP | D | D | D | D | P | P | P | P | P | D | D | D |
| Hall's Panicum | Panicum hallii | EP | D | D | D | D | P | P | P | P | D | D | D | D |

**Animal Kind**: Livestock
**Animal Type**: Sheep

| Common Name | Scientific Name | Plant Part | Forage Preferences | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | J | F | M | A | M | J | J | A | S | O | N | D |
| Black Grama | Bouteloua eriopoda | EP | P | P | P | D | D | D | D | D | D | D | P | P |
| Sideoats Grama | Bouteloua curtipendula | EP | P | P | P | P | P | P | P | P | P | P | P | P |
| Blue Grama | Bouteloua gracilis | EP | D | D | D | D | P | P | P | P | P | D | D | D |
| Forbs | Various | EP | N/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S |

**Animal Kind**: Livestock
**Animal Type**: Goats

| Common Name | Scientific Name | Plant Part | Forage Preferences | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | J | F | M | A | M | J | J | A | S | O | N | D |
| Croton | Croton spp. | L/S | D | D | D | D | P | P | P | D | D | D | D | D |
| Senna | Senna spp. | L/S | D | D | D | D | D | D | D | D | D | D | D | D |
| Wildbuckwheat | Eriogonum spp. | EP | U | U | D | D | D | D | D | D | U | U | U | U |
| Shrubs | Various | L/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S |

**Animal Kind**: Wildlife
**Animal Type**: Mule deer

| Common Name | Scientific Name | Plant Part | Forage Preferences | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | J | F | M | A | M | J | J | A | S | O | N | D |
| Croton | Croton spp. | L/S | D | D | D | D | P | P | P | D | D | D | D | D |
| Senna | Senna spp. | L/S | D | D | D | D | D | D | D | D | D | D | D | D |
| Wildbuckwheat | Eriogonum spp. | EP | U | U | D | D | D | D | D | D | U | U | U | U |
| Shrubs | Various | L/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S | N/S |

**Animal Kind**: Wildlife
**Animal Type**: Antelope

| Common Name | Scientific Name | Plant Part | Forage Preferences | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | J | F | M | A | M | J | J | A | S | O | N | D |
| Croton | Croton spp. | L/S | D | D | D | D | D | D | D | D | D | D | D | D |
| Wildbuckwheat | Eriogonum spp. | EP | U | U | D | D | D | D | D | D | U | U | U | U |
| Hall's Panicum | Panicum hallii | EP | D | D | D | D | D | D | D | D | D | D | D | D |

## SUPPORTING INFORMATION

**Associated sites**:

| Site Name | Site ID | Site Narrative |
|---|---|---|
| | | |

**Similar sites**:

| Site Name | Site ID | Site Narrative |
|---|---|---|
| | | |

**State Correlation**:

**This site has been correlated with the following sites**: _____

**Inventory Data References**:

| Data Source | # of Records | Sample Period | State | County |
|---|---|---|---|---|
| | | | | |

**Type Locality**:

**State**: **New Mexico**

**County**: **Chavez, Eddy, Lincoln, Otero**

**Latitude**: _____

**Longitude**: _____

**Township**: _____

**Range**: _____

**Section**: _____

**Is the type locality sensitive?** **Yes** ☐ **No** ☐

**General Legal Description**: _____

| **Relationship to Other Established Classifications**: |
|---|
| |

**Other References:**

Data collection for this site was done in conjunction with the progressive soil surveys within the Pecos-Canadian Plains and Valleys 70 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Otero, Eddy, Chaves, Lincoln

| **Characteristic Soils Are:** | |
|---|---|
| Penasco | |
| **Other Soils included are:** | |
| Espy | Ector |
| Tencee | |

**Site Description Approval:**

| **Author** | **Date** | **Approval** | **Date** |
|---|---|---|---|
| Don Sylvester | 02/02/82 | Donald H. Fulton | 03/03/82 |

**Site Description Revision:**

| **Author** | **Date** | **Approval** | **Date** |
|---|---|---|---|
| Elizabeth Wright | 07/10/02 | George Chavez | 12/17/02 |